

Applic. No. 10/642,548  
Amdt. dated November 10, 2004  
Reply to Office action of August 10, 2004

Remarks/Arguments:

Reconsideration of the application is requested.

Claims 1-12, 14, 16, and 17 remain in the application. Claims 1, and 14 have been amended. Claims 13 and 15 have been cancelled.

In item 3 on page 3 of the above-identified Office action, the specification has been objected to as being because of the following informalities.

More specifically, the Examiner has stated that the term "shape means the area moments of inertia" must include units such as inches to the fourth power. It is noted that the Examiner is correct regarding the fact that the area moment of inertia would have linear dimension units to the fourth power. The area moment of inertia with respect to an axis "x" is defined as an area integral  $I_x = \int_A y^2 dA$  with  $y$  being the distance of an area element  $dA$  from the axis "x". This is exactly why the term "area" is used in front of moment of inertia. Since the invention does not include any mathematical formulas it is not believed that it is necessary to specify the units as suggested by the Examiner. Therefore,

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the specification has not been amended to overcome the objection by the Examiner.

In item 4 on page 3 of the Office action, claims 2 and 3 have been objected to because of the following informalities.

However, it is believed that the Examiner actually meant claims 3 and 4.

More specifically, the Examiner stated that the limitation "defined area moment of inertia" must include units such as inches to the fourth power. As stated above the Examiner is correct that the "area moment of inertia" would have linear dimension units to the fourth power. However, since the claims do not include any formulas for the area moment of inertia it is not believed that it is necessary to specify units. Therefore, claims 3 and 4 have not been amended to overcome the objection by the Examiner.

Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved.

In item 5 on page 3 of the Office action, claims 1-4, 5-8, 10, and 13 have been rejected as being fully anticipated by Kang et al. (U.S. Patent No. 6,421,407) (hereinafter "Kang") under

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35 U.S.C. § 102. Claim 1 has been amended so as to include the subject matter of claim 15 and intervening claim 13. Since claim 15 was not rejected over Kang, claim 1 is believed to be allowable over Kang. Nevertheless, the following remarks pertain to claim 1 with respect to Kang.

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and as a whole, the claims have, therefore, not been amended to overcome the references. However, as stated above the subject matter of claim 15 and thus intervening claim 13 has been added to claim 1.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, *inter alia*:

two mutually intersecting webs each bearing a respective vane on both sides of an intersection thereof disposed for producing oppositely directed swirl impulses.

Applicants respectfully disagree with the Examiner's comments on page 4 of the Office action, that Kang discloses that vanes act upon a coolant stream in the same longitudinal direction

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and produce opposite swirl impulses. Although Kang discloses that the upper and lower dipper vanes (22) are oppositely directed to each other in order to produce a swirl movement around the intersecting points of the gate, the generated swirl stream has the same direction at each intersecting point of the gate (column 5, lines 1-27). Therefore, due to the identical arrangement of the vanes, the generated swirl stream has the same direction at each intersecting point. This is contrary to the invention of the instant application as claimed, in which two mutually intersecting webs each bear a respective vane on both sides of an intersection thereof disposed for producing oppositely directed swirl impulses.

The reference does not show two mutually intersecting webs each bearing a respective vane on both sides of an intersection thereof disposed for producing oppositely directed swirl impulses, as recited in claim 1 of the instant application. As stated above, the Kang reference discloses that the generated swirl stream has the same direction at each intersecting point, due to the identical arrangement of the vanes. This is contrary to the invention of the instant application as claimed, in which two mutually intersecting webs each bear a respective vane on both sides of an intersection thereof disposed for producing oppositely directed swirl impulses.

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Since claim 1 is believed to be allowable over Kang, dependent claims 2-4, 5-8, and 10 are believed to be allowable over Kang as well.

In item 6 on page 5 of the Office action, claims 1, 2, 5, 7, 11, and 12 have been rejected as being fully anticipated by Pugh et al. (U.S. Patent No. 3,862,000) (hereinafter "Pugh") under 35 U.S.C. § 102. As stated above, claim 1 was amended to include the subject matter of claim 15 and intervening claim 13. Claim 15 was not rejected over Pugh, nor did the Examiner provide any comments pertaining to claim 15. Therefore, claim 1 is believed to be allowable.

Furthermore, Pugh does not show two mutually intersecting webs each bearing a respective vane on both sides of an intersection thereof disposed for producing oppositely directed swirl impulses, as recited in claim 1 of the instant application.

Since claim 1 is believed to be allowable over Pugh, dependent claims 2, 5, 7, 11, and 12 are believed to be allowable over Pugh as well.

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In item 7 on page 5 of the Office action, claim 9 has been rejected as being obvious over either of Kang (U.S. Patent No. 6,421,407) or Pugh (U.S. Patent No. 3,862,000) under 35 U.S.C. § 103. Since claim 1 is believed to be allowable over Kang and/or Pugh, dependent claim 9 is believed to be allowable as well.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-12, 14, 16, and 17 are solicited.

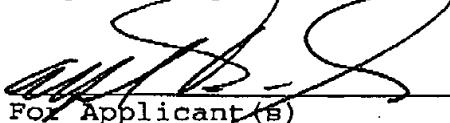
In the event the Examiner should still find any of the claims to be unpatentable, counsel respectfully requests a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

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Please charge any other fees which might be due with respect  
to Sections 1.16 and 1.17 to the Deposit Account of Lerner &  
Greenberg P.A., No. 12-1099.

Respectfully submitted,

  
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